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<110> Graff, Jonathan M.  
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Spencer, Jeffrey A.

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 tattctttta gcagtgttg cttccattga ccatatgaag gccaccaatt aaatggttgt 4440  
 gttaatccaa catgtaaaaa actttttggc agggcacagt ggctcacgcc tgtaatccca 4500  
 aagtgtgga atttacaggt aggaccacca cacttggtcc acttacttat aataaacatt 4560  
 gatttggctg ttaaaaaaaaa aaaaaaaaaa aaaaa 4595

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Leu Leu Ala Ala Ser Pro Gly His Pro Ala Lys Ser Pro Arg Gln Pro  
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Pro Ala Pro Arg Arg Asp Pro Phe Asp Ala Ala Arg Gly Ala Asp Phe  
 35 40 45

Asp His Val Tyr Ser Gly Val Val Asn Leu Ser Thr Glu Asn Ile Tyr  
 50 55 60

Ser Phe Asn Tyr Thr Ser Gln Pro Asp Gln Val Thr Ala Val Arg Val  
 65 70 75 80

Tyr Val Asn Ser Ser Ser Glu Asn Leu Asn Tyr Pro Val Leu Val Val  
 85 90 95



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Val Arg Gln Gln Lys Glu Val Leu Ser Trp Gln Val Pro Leu Leu Phe  
 100 105 110  
 Gln Gly Leu Tyr Gln Arg Ser Tyr Asn Tyr Gln Glu Val Ser Arg Thr  
 115 120 125  
 Leu Cys Pro Ser Glu Ala Thr Asn Glu Thr Gly Pro Leu Gln Gln Leu  
 130 135 140  
 Ile Phe Val Asp Val Ala Ser Met Ala Pro Leu Gly Ala Gln Tyr Lys  
 145 150 155 160  
 Leu Leu Val Thr Lys Leu Lys His Phe Gln Leu Arg Thr Asn Val Ala  
 165 170 175  
 Phe His Phe Thr Ala Ser Pro Ser Gln Pro Gln Tyr Phe Leu Tyr Lys  
 180 185 190  
 Phe Pro Lys Asp Val Asp Ser Val Ile Ile Lys Val Val Ser Glu Met  
 195 200 205  
 Ala Tyr Pro Cys Ser Val Val Ser Val Gln Asn Ile Met Cys Pro Val  
 210 215 220  
 Tyr Asp Leu Asp His Asn Val Glu Phe Asn Gly Val Tyr Gln Ser Met  
 225 230 235 240  
 Thr Lys Lys Ala Ala Ile Thr Leu Gln Lys Lys Asp Phe Pro Gly Glu  
 245 250 255  
 Gln Phe Phe Val Val Phe Val Ile Lys Pro Glu Asp Tyr Ala Cys Gly  
 260 265 270  
 Gly Ser Phe Phe Ile Gln Glu Lys Glu Asn Gln Thr Trp Asn Leu Gln  
 275 280 285  
 Arg Lys Lys Asn Leu Glu Val Thr Ile Val Pro Ser Ile Lys Glu Ser  
 290 295 300  
 Val Tyr Val Lys Ser Ser Leu Phe Ser Val Phe Ile Phe Leu Ser Phe  
 305 310 315 320  
 Tyr Leu Gly Cys Leu Leu Val Gly Phe Val His Tyr Leu Arg Phe Gln  
 325 330 335  
 Arg Lys Ser Ile Asp Gly Ser Phe Gly Ser Asn Asp Gly Ser Gly Asn  
 340 345 350

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Met Val Ala Ser His Pro Ile Ala Ala Ser Thr Pro Glu Gly Ser Asn  
355 360 365

Tyr Gly Thr Ile Asp Glu Ser Ser Ser Ser Pro Gly Arg Gln Met Ser  
370 375 380

Ser Ser Asp Gly Gly Pro Pro Gly Gln Ser Asp Thr Asp Ser Ser Val  
385 390 395 400

Glu Glu Ser Asp Phe Asp Thr Met Pro Asp Ile Glu Ser Asp Lys Asn  
405 410 415

Ile Ile Arg Thr Lys Met Phe Leu Tyr Leu Ser Asp Leu Ser Arg Lys  
420 425 430

Asp Arg Arg Ile Val Ser Lys Lys Tyr Lys Ile Tyr Phe Trp Asn Ile  
435 440 445

Ile Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Ile Gln Leu Val Ile  
450 455 460

Thr Tyr Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr  
465 470 475 480

Tyr Asn Phe Leu Cys Ala His Pro Leu Gly Val Leu Ser Ala Phe Asn  
485 490 495

Asn Ile Leu Ser Asn Leu Gly His Val Leu Leu Gly Phe Leu Phe Leu  
500 505 510

Leu Ile Val Leu Arg Arg Asp Ile Leu His Arg Arg Ala Leu Glu Ala  
515 520 525

Lys Asp Ile Phe Ala Val Glu Tyr Gly Ile Pro Lys His Phe Gly Leu  
530 535 540

Phe Tyr Ala Met Gly Ile Ala Leu Met Met Glu Gly Val Leu Ser Ala  
545 550 555 560

Cys Tyr His Val Cys Pro Asn Tyr Ser Asn Phe Arg Phe Asp Thr Ser  
565 570 575

Phe Met Tyr Met Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Thr  
580 585 590

Arg His Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Ser Phe

595

600

605

Ala Val Val Ile Met Val Thr Val Leu Gly Val Val Phe Gly Lys Asn  
 610 615 620

Asp Val Trp Phe Trp Val Ile Phe Ser Ala Ile His Val Leu Ala Ser  
 625 630 635 640

Leu Ala Leu Ser Thr Gln Ile Tyr Tyr Met Gly Arg Phe Lys Ile Asp  
 645 650 655

Leu Gly Ile Phe Arg Arg Ala Ala Met Val Phe Tyr Thr Asp Cys Ile  
 660 665 670

Gln Gln Cys Ser Arg Pro Leu Tyr Met Asp Arg Met Val Leu Leu Val  
 675 680 685

Val Gly Asn Leu Val Asn Trp Ser Phe Ala Leu Phe Gly Leu Ile Tyr  
 690 695 700

Arg Pro Arg Asp Phe Ala Ser Tyr Met Leu Gly Ile Phe Ile Cys Asn  
 705 710 715 720

Leu Leu Leu Tyr Leu Ala Phe Tyr Ile Ile Met Lys Leu Arg Ser Ser  
 725 730 735

Glu Lys Val Leu Pro Val Pro Leu Phe Cys Ile Val Ala Thr Ala Val  
 740 745 750

Met Trp Ala Ala Ala Leu Tyr Phe Phe Phe Gln Asn Leu Ser Ser Trp  
 755 760 765

Glu Gly Thr Pro Ala Glu Ser Arg Glu Lys Asn Arg Glu Cys Ile Leu  
 770 775 780

Leu Asp Phe Phe Asp Asp His Asp Ile Trp His Phe Leu Ser Ala Thr  
 785 790 795 800

Ala Leu Phe Phe Ser Phe Leu Val Leu Leu Thr Leu Asp Asp Asp Leu  
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Asp Val Val Arg Arg Asp Gln Ile Pro Val Phe  
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&lt;211&gt; 541

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 6

Met Arg Gly Cys Leu Arg Leu Ala Leu Leu Cys Ala Leu Pro Trp Leu  
 1 5 10 15  
 Leu Leu Ala Ala Ser Pro Gly His Pro Ala Lys Ser Pro Arg Gln Pro  
 20 25 30  
 Pro Ala Pro Arg Arg Asp Pro Phe Asp Ala Ala Arg Gly Ala Asp Phe  
 35 40 45  
 Asp His Val Tyr Ser Gly Val Val Asn Leu Ser Thr Glu Asn Ile Tyr  
 50 55 60  
 Ser Phe Asn Tyr Thr Ser Gln Pro Asp Gln Val Thr Ala Val Arg Val  
 65 70 75 80  
 Tyr Val Asn Ser Ser Ser Glu Asn Leu Asn Tyr Pro Val Leu Val Val  
 85 90 95  
 Val Arg Gln Gln Lys Glu Val Leu Ser Trp Gln Val Pro Leu Leu Phe  
 100 105 110  
 Gln Gly Leu Tyr Gln Arg Ser Tyr Asn Tyr Gln Glu Val Ser Arg Thr  
 115 120 125  
 Leu Cys Pro Ser Glu Ala Thr Asn Glu Thr Gly Pro Leu Gln Gln Leu  
 130 135 140  
 Ile Phe Val Asp Val Ala Ser Met Ala Pro Leu Gly Ala Gln Tyr Lys  
 145 150 155 160  
 Leu Leu Val Thr Lys Leu Lys His Phe Gln Leu Arg Thr Asn Val Ala  
 165 170 175  
 Phe His Phe Thr Ala Ser Pro Ser Gln Pro Gln Tyr Phe Leu Tyr Lys  
 180 185 190  
 Phe Pro Lys Asp Val Asp Ser Val Ile Ile Lys Val Val Ser Glu Met  
 195 200 205  
 Ala Tyr Pro Cys Ser Val Val Ser Val Gln Asn Ile Met Cys Pro Val  
 210 215 220  
 Tyr Asp Leu Asp His Asn Val Glu Phe Asn Gly Val Tyr Gln Ser Met  
 225 230 235 240

Thr Lys Lys Ala Ala Ile Thr Leu Gln Lys Lys Asp Phe Pro Gly Glu  
245 250 255

Gln Phe Phe Val Val Phe Val Ile Lys Pro Glu Asp Tyr Ala Cys Gly  
260 265 270

Gly Ser Phe Phe Ile Gln Glu Lys Glu Asn Gln Thr Trp Asn Leu Gln  
275 280 285

Arg Lys Lys Asn Leu Glu Val Thr Ile Val Pro Ser Ile Lys Glu Ser  
290 295 300

Val Tyr Val Lys Ser Ser Leu Phe Ser Val Phe Ile Phe Leu Ser Phe  
305 310 315 320

Tyr Leu Gly Cys Leu Leu Val Gly Phe Val His Tyr Leu Arg Phe Gln  
325 330 335

Arg Lys Ser Ile Asp Gly Ser Phe Gly Ser Asn Asp Gly Ser Gly Asn  
340 345 350

Met Val Ala Ser His Pro Ile Ala Ala Ser Thr Pro Glu Gly Ser Asn  
355 360 365

Tyr Gly Thr Ile Asp Glu Ser Ser Ser Ser Pro Gly Arg Gln Met Ser  
370 375 380

Ser Ser Asp Gly Gly Pro Pro Gly Gln Ser Asp Thr Asp Ser Ser Val  
385 390 395 400

Glu Glu Ser Asp Phe Asp Thr Met Pro Asp Ile Glu Ser Asp Lys Asn  
405 410 415

Ile Ile Arg Thr Lys Met Phe Leu Tyr Leu Ser Asp Leu Ser Arg Lys  
420 425 430

Asp Arg Arg Ile Val Ser Lys Lys Tyr Lys Ile Tyr Phe Trp Asn Ile  
435 440 445

Ile Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Ile Gln Leu Val Ile  
450 455 460

Thr Tyr Gln Thr Cys Leu Gln Gln His Ser Gln Gln Ser Gly Pro Arg  
465 470 475 480

Ala Ser Gly Leu Pro Leu Pro Ala Asp Ser Leu Ala Pro Arg His Pro  
485 490 495

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Pro Ser Glu Ser Pro Gly Ser Gln Gly His Leu Cys Cys Gly Val Arg  
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Asp Ser Gln Thr Leu Trp Ser Leu Leu Arg Tyr Gly His Cys Ile Asp  
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Asp Gly Arg Gly Ala Gln Cys Leu Leu Pro Cys Leu Pro  
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ataaggatct cggtggctat 20

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cttcaggagt cctccacagc 20

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cagacacaga gctgccagac 20

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<400> 11  
aggagagcga cttcgacacc 20

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